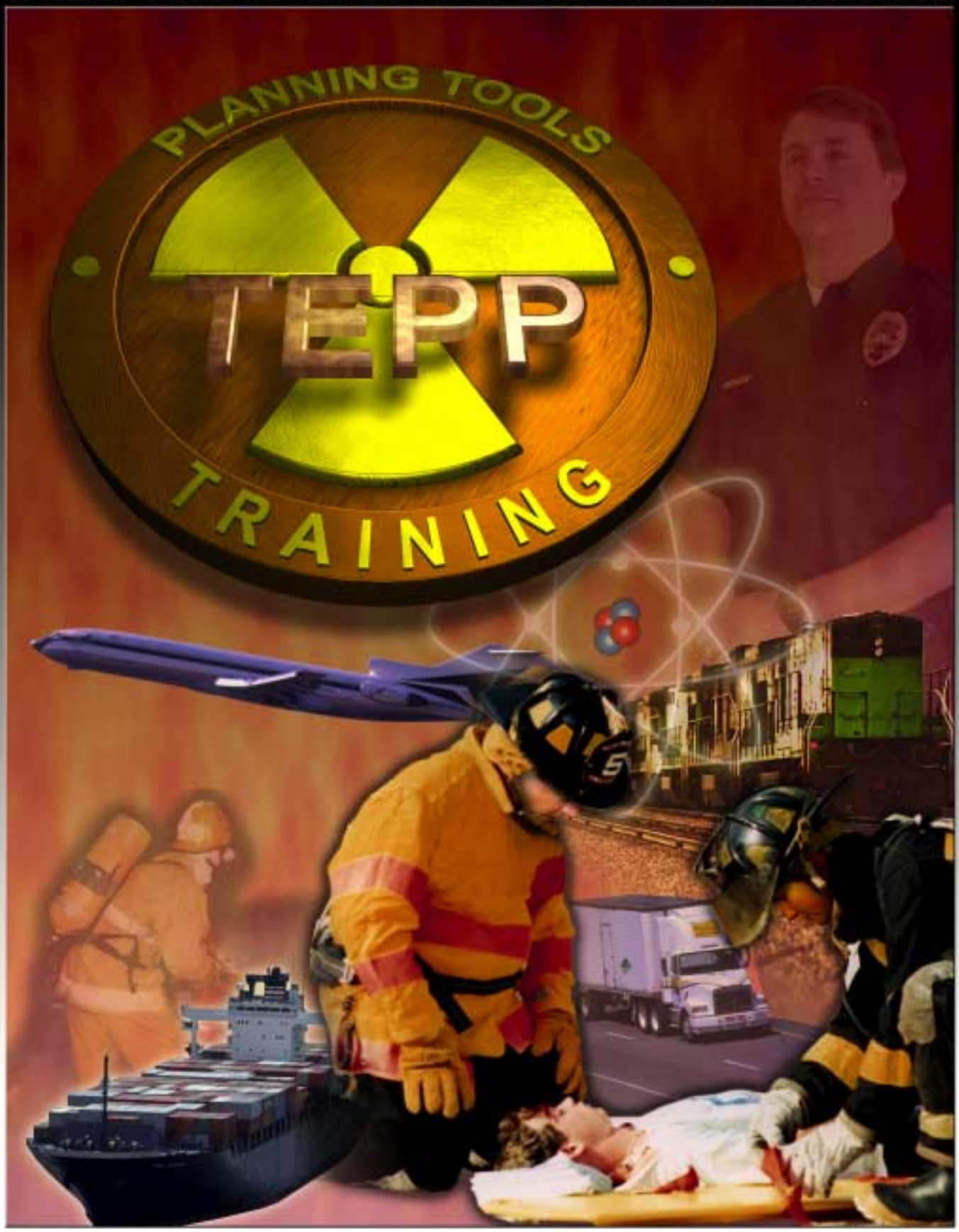
TRANSPORTATION EMERGENCY PREPAREDNESS PROGRAM

DEPARTMENT OF ENERGY



Hazardous Materials Incident Response Procedure

Prepared For The Department of Energy Office of Transportation and Emergency Management

This page intentionally left blank

table of contents

Transportation Emergency Preparedness Program (TEPP)
Hazardous Materials Incident Response Procedure

ASSUMPTIONS

- This Transportation Emergency Preparedness Program (TEPP) Hazardous Materials Response Procedure Model contains the recommended actions for response to transportation incidents involving radiological materials.
- The following assumptions are to be considered when reviewing this procedure:
- This procedure is not all inclusive but was developed to meet the minimum national standards for response to a hazardous materials incident.
- This procedure is designed for use by trained and qualified emergency responders to operate within the guidelines of CFR 1910.120. Additional procedural requirements may be implemented according to the appropriate state, tribal or local standards.
- Response to transportation accidents involving radioactive materials should be managed as a response to a non-radioactive material hazardous material incident with additional actions and precautions implemented as necessary due to the radiological concerns.
- The response procedure should be utilized appropriately according to the conditions encountered when arriving at these incidents.
- All emergency response personnel have been trained in the use of an Incident Management System such as the Incident Command System.
- Incident scene decisions regarding operations in the hot zone shall be approved by the Federal, state, tribal or local agency or official designated as the Radiation Authority.

1.0 PURPOSE

The purpose of this procedure is to provide guidance for responding to transportation accidents involving radioactive material or other hazardous materials incidents.

2.0 SCOPE

This procedure applies to those personnel who have responsibilities listed in Section 3.0. Furthermore, this procedure is intended for use on any response involving actual or potential radiological or other hazardous material release.

3.0 RESPONSIBILITIES

3.1 Emergency Communications Center shall:

- 3.1.1 Notify Hazardous Materials Response Team (HMRT) Senior Officer and team members of the accident and dispatch equipment as required.
- 3.1.2 Record information as required by the Emergency Communications Center Spill Response Report Forms/Procedures.

3.2 HMRT Senior Officer shall:

- 3.2.1 Contact shipper and carrier representatives.
- 3.2.2 Complete Hazardous Materials Data Sheet. (See Attachment A)
- 3.2.3 Consult with shipper, carrier representatives, Local Fire Department and State Radiation Control Division or Environmental Protection Division to review proposed actions.
- 3.2.4 Identify and direct isolation plans.
- 3.2.5 Decide cleanup plan or request a private clean up contractor from the State approved list.
- 3.2.6 Give proper turnover if a Contractor Spill Response Team is requested.
- 3.2.7 Communicate with appropriate agencies concerning incident status.
- 3.2.8 Be responsible for completion of all incident documentation.

3.3 Emergency Medical Service personnel shall:

- 3.3.1 Monitor HMRT member's vital signs prior to entry into hazardous environment.
- 3.3.2 Monitor HMRT team member's vital signs upon exiting hazardous environment.

3.4 Incident Commander shall:

- 3.4.1 Ensure completion of Section 12.0, Scene Safety Plan any time level A or B entry work is necessary.
- 3.4.2 Ensure completion of this procedure.

4.0 RECORDS

4.1 Section 12.0, Scene Safety Plan.
4.2 See attachments, this procedure:
Attachment A - HMRT Hazardous Material Data Sheet
Attachment B - HMRT Hazardous Materials Medical Surveillance Report
Attachment C - HMRT Hazardous Materials Response Summary
Attachment D - Emergency Communications Center Report

5.0 FREQUENCY

As needed.

6.0 REFERENCES

6.1 NFPA 471 (1997)- Recommended Practice for Responding to Hazardous Materials Incidents.
6.2 NFPA 472 (1997)- Standard for Professional Competence of Responders to Hazardous Materials Incidents.
6.3 10 CFR 835.1302 - Emergency Exposure Situations
6.4 29 CFR 1910.120 - Hazardous Waste Operations and Emergency Response
6.5 DOT 2000 Emergency Response Guidebook
6.6 US Environmental Protection Agency - Standard Operating Safety Guide
6.7 International Association of Firefighters - Training for Hazardous Materials Emergency Response
6.8 MSDS Pocket Dictionary - JJ Keller 1995
6.9 Transport of Radioactive Materials Q&A -Oak Ridge Associated Universities
6.10 Guidance for Developing State, Tribal and Local Radiological Emergency Response Planning and Preparedness for Transportation Accidents - Federal Emergency Management Agency - 1992

7.0 EQUIPMENT

Hazardous materials response equipment as determined by nature and scope of incident.

8.0 LOCATION

See appropriate section for type response.

9.0 SAFETY

9.1 Work within safety guidelines as specified in reference manuals.
9.2 Involve appropriate shipper, carrier, Federal, State, Tribal or local officials to assist in incident evaluation.
9.3 The Safety Officer designated by the Incident Commander on the scene has the authority to stop any work in which safety related items may be an issue.

10.0 TERMS/DEFINITIONS

ALARA - As low as reasonably achievable. Guideline for radiation exposure protection.

Buddy System - a method of organizing employees into work groups in such a manner that each employee of the work group is designated to be observed by at least one other employee in the work group. The purpose of the buddy systems to provide rapid assistant to employees in the event of an emergency.

CAS Number - *Chemical Abstracts Service* Number is a concise, unique means used to identify a chemical. Chemical Abstracts Service indexes information is published in *Chemical Abstracts* by the American Chemical Society and provides index guides by which information about particular substances may be located in the abstracts.

CFR - ***Code of Federal Regulations*** - A collection of the regulations established by law. Contact the agency that issued the regulation for details, interpretations, etc.

Control Zones - The areas at a hazardous materials incident that are designated based upon safety and the degree of hazard. Many terms are used to describe the zones involved in a hazardous materials incident. For the purposes of this document, these zones are defined as the hot, warm and cold zones.

Decontamination *(Contamination Reduction)* - The physical and/or chemical process of reducing and preventing the spread of contamination at a hazardous materials incident.

DOE - US Department of Energy.

Dose - A general term for the quantity of radiation energy absorbed.

Dose Rate - The dose delivered per unit time. It is usually expressed as rads per hour or in multiples or sub-multiples of this unit, such as millirads per hour. The dose rate is commonly used to indicate the level of hazard from a radioactive source.

DOT - US Department of Transportation

EPA - US Environmental Protection Agency.

ERG - ***Emergency Response Guidebook*** - Booklet that provides guidance during the initial phases of transportation emergencies involving all hazardous materials.

Exposure - A quantity used to indicate the amount of ionization in air produced by x- or gamma radiation. The unit is the Roentgen (R). For practical purposes, one roentgen is comparable to 1 rad or 1 rem for x- and gamma radiation.

Hazardous Material - A substance capable of creating harm to people, the environment and property.

HMRT - ***Hazardous Materials Response Team*** - An organized group of employees, designated by the employer, who are trained and qualified to perform to handle and control actual and potential leaks or spills of hazardous substances.

IC - ***Incident Commander*** - The person responsible for all decisions relating to the management of the incident. The incident commander is in charge of the incident scene. This term is equivalent to the on-scene incident commander.

ICS - ***Incident Command System*** - An organized approach to control and manage operations at an emergency incident. The OSHA Hazardous Waste Operations and Emergency Response regulations (29 CFR 1910.120 (q) (3)(ii) require that an ICS be implemented by the senior emergency response official on the scene).

LEL - ***Lower Explosive Limit*** - Refers to the lowest concentration of gas or vapor (% by volume in air) that burns or explodes if an ignition source is present at ambient temperatures.

mm Hg - A measure of pressure in millimeters of a mercury column above a reservoir.

Monitoring Equipment - Instruments and devices used to identify and quantify contaminants.

MSDS - ***Material Safety Data Sheet*** - A fact sheet summarizing information about material identification; hazardous ingredients; health, physical, and fire hazards; first aid; chemical reactivities and compatibilities; spill, leak and disposal procedures; and protective measures required for safe handling and storage.

NFPA - ***National Fire Protection Association***- An international voluntary membership organization formed to promote/improve fire protection and prevention and establish safeguards against loss of life and property by fire.

NIOSH - ***National Institute of Occupational Safety and Health***.

OSHA - ***Occupational Safety and Health Administration*** - The U.S. Department of Labor's regulatory and enforcement agency for safety and health.

PPE -***Personal Protective Clothing*** includes both respiratory and physical protection. One cannot assign a level of protection to clothing or respiratory devices separately. These levels were accepted and defined by response organizations such as U. S. Coast Guard, NIOSH, and U.S. EPA.

Level A: Self Contained Breathing Apparatus (SCBA) plus fully encapsulating chemical resistant clothing (permeation resistant)
Level B: Self Contained Breathing Apparatus (SCBA) plus chemical resistant clothing (splash proof)
Level C: Full or half-face respirator plus chemical resistant clothing (splash proof)
Level D: Coverall with no respiratory protection.

Qualified Person - A person with specific training, knowledge, and experience in the area for which the person has the responsibility and/or authority to control.

RAD - ***Radiation Absorbed Dose*** is the unit of measure that describes the absorbed dose of radiation. A rad is one way to quantify the amount of energy received.

Radiation *Authority* - A Federal, state/Tribal agency or state/Tribal designated official. Responsibilities include evaluating radiological hazard conditions during normal operations and emergencies.

Radioactive White-I - 0.5 mR/hr maximum on surface; 0.05 mR/hr maximum at 1 meter.
Radioactive Yellow-II - 50 mR/hr maximum on surface; 1 mR/hr maximum at 1 meter.
Radioactive Yellow-III - 200 mR/hr maximum on surface; 10 mR/hr maximum at 1 meter.

RAP - ***Radiological Assistance Program*** maintained by the US Department of Energy.

Rem - ***Radiation Equivalent Man*** is a measure of radiation dose related to biological effects.

Strong, Tight Packages - Used to transport materials with extremely low levels of radioactivity.

Type A Packages - Used to transport small quantities of radioactive materials with higher concentrations of radioactivity than those shipped in industrial packages. Typically constructed of steel, wood, fiberboard. Type A Package designs undergo more extensive testing than industrial packages.

Type B Packages - Used to transport material with the highest levels of radioactivity. Type B Packages range from small steel drums to heavily shielded, steel casks. Type B Package designs must withstand all the Type A tests as well as a series of severe accident conditions simulated by performance testing and engineering analyses.

UEL - ***Upper Explosive Limits*** - The highest concentration of a material in air that produces an explosion or fire or that ignites when it contacts an ignition source.

11.0 RESPONSE PROCEDURE

11.1 When notified of a radioactive material or other hazardous materials incident by the Emergency Communications Center, the HMRT senior officer shall request and record all pertinent information as obtained by Emergency Communications Center on the Hazardous Materials Incident Report Form (see Attachment D).

11.2 Upon arrival at incident scene, the HMRT senior officer is to:

Report to the Incident Command Post and receive an incident briefing from the Incident Commander.

Verify initial responders using the North American Emergency Response Guidebook appropriately identified and implemented recommended ERG protective actions.

Request Shipping/MSDS Papers from the Incident Commander or transporting carrier representative.

Complete the HMRT Hazardous Materials Data Sheet to assist in scene assessment. (See Attachment A.)

11.3 Upon completion of Data Sheet, the HMRT senior officer is to consult with Federal, State, Tribal and/or local agencies on scene to review proposed actions.

11.4 Based on the IC's decision, if the Hazardous Materials Response Team is to be assigned to response duties for a long duration, the IC will request mutual aid from State, Tribal, local or private response agencies. If the incident exceeds HMRT capabilities, the following agencies can be contacted for assistance:

11.4.1 Local Emergency Response
Support County Emergency Management Division
Local Mutual Aid Emergency Responders

11.4.2 State Emergency Response Support
State Emergency Management Division
State Division of Radiation Protection or Control
State Environmental Protection Division

NOTE: Communications with the State Emergency Response vehicle can be established by obtaining cellular phone number from agency.

Include names, addresses and telephone numbers local, state or tribal radiation authorities having responsibility for emergency response and/or assistance.

Local, State or Tribal Contact for Radioactive Materials Response	Mailing Address	24 Hour Telephone

11.5 Upon agreement to proceed, the HMRT will continue with incident stabilization following the Scene Safety Plan.

12.0 SCENE SAFETY PLAN

This portion of the Hazardous Materials Response procedure shall be filled out prior to HMRT entry and shall be updated as necessary during the course of the incident. Appropriate Attachments shall be completed as required.

Date of Plan: _____ Time: _____

12.1 Verify:

Initial emergency responders have implemented appropriate actions as indicated by the North American Emergency Response Guidebook and that incident scene has been re-evaluated for changing conditions or additional hazards.

12.2 Verify:

Attachment A, "Hazardous Materials Data Sheet" has been completed for each hazard.

12.3 Incident Command Organization:

List the person(s) responsible for each job function listed below:

NOTE: A person may be assigned more than one job function.

Incident Commander _____

Safety Officer: _____

Operations Officer: _____

Public Info. Officer: _____

Security Officer: _____

Logistics Officer: _____

Staging Area Officer: _____

Science Officer: _____

Medical Officer: _____

Decon Personnel: _____

_____

Entry Team: _____

EntryTeam: _____

Backup Team: _____

_____

Federal Agency Reps.: _____

State Agency Reps.: _____

_____

Tribal Reps: _____

_____

Local Agency Reps: _____

12.4 Hazard Evaluation:

List all known or suspected hazardous substances and concentrations suspected to be on-scene. Identify the primary hazard of each.

NOTE: Attachment A shall be completed for each hazardous substance involved. Additional products may be listed in Section 13.0, Comments.

Product	Concentration	Primary Hazard
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

12.5 Personal Protective Equipment:

List specific Personal Protective Equipment (PPE) requirements as recommended by reference material and/or MSDS:

Product	PPE Requirement

When determining level of personal protective equipment for response to radiological hazards, utilize North American Emergency Response Guidebook guides 161-166. MSDS and information provided by shipper.

Upon evaluation of known and suspected potential hazards, personal protective equipment shall be selected and documented below:

Location	Job Function	Level of Protection
Hot Zone (Exclusion)	_____	A B C D Other
	_____	A B C D Other
	_____	A B C D Other
	_____	A B C D Other
Warm Zone (Decon)	_____	A B C D Other
	_____	A B C D Other
	_____	A B C D Other
	_____	A B C D Other
Cold Zone (Support)	_____	A B C D Other
	_____	A B C D Other

NOTE: Only the Incident Commander or the Safety Officer have the authority to change the type of personal protective equipment to be used during the incident.

12.6 Incident Scene Monitoring

Monitoring for hazardous atmospheres should be used in establishing the Command Post location. The Command Post should be continuously monitored for hazardous atmospheres.

Incident scene monitoring must be conducted during initial and subsequent entries.

12.6.1 Conversion factors:

Conversion factor will be conducted by the Science Officer then relayed to the Incident Commander and Operations Officer. List the monitoring instrument(s) and conversion factors or calibration information as reflected by manufactures literature or procedure:

Instrument: Conversion factor: Calibrated to:

_____/_____/_____

_____/_____/_____

_____/_____/_____

12.6.2 Command Post Atmospheric Monitoring Results

Time	O2 %	CGI%	Radiation Survey
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

The following action levels are provided as EPA recommendations.

Oxygen Indicator:
<19.5% Monitor using SCBA.
>25% Discontinue monitoring; fire hazard potential.
Combustible Gas Indicator (CGI):
<10% LEL Continue monitoring with caution
10-25% LEL Continue monitoring with extreme caution as higher levels are encountered.
>25% LEL Explosion hazard; withdraw from area immediately.
Radiation Survey:
>1 mR/hr Withdraw from area. Continue monitoring only upon advice from Radiation Support Personnel

12.7 Scene Access Control:

Control boundaries (hot zone, warm zone and cold zone) for the incident shall be established. These areas shall be identified on an attached map or drawn on page 18.

This map should be developed prior to the initial HMRT entry. The map should include the following information:

- Identification of map north
- Wind direction
- Command Post
- Staging Area
- Rehab Area
- Access Control points
- Contamination reduction line
- Drainage points
- Natural & manmade topographic features including locations of buildings, containers, impoundments, pits, ponds, tanks or any other scene features.

Update incident scene maps as necessary to reflect changing conditions or new information.

Boundaries identified by: _____

_____

Person designated to coordinate scene access:_____

NOTE: Only authorized personnel shall be allowed within the incident area. Qualifications for entry include training and medical monitoring according to OSHA 29 CFR 1910.120.

Command Post location: _____

Staging location: _____

Rehab location: _____

Wind Direction & Conditions: _____

NOTE: The Command Post, Staging Area and Rehab Area are to be located upwind from the exclusion area.

INCIDENT SCENE MAP

(Indicate map north)

12.8 Communications

All personnel involved in entry team activities shall remain in constant communication via radio, visual or verbal methods with the IC or his designee (HMRT Operations Officer, Safety Officer, etc.). Failure of communication requires the entry team to exit the hot zone.

Reference Section 12.13 for emergency procedures and signals to indicate when personnel should exit the hot zone.

Identify communication methods available to the Command Post:

Cellular Phone Numbers: _____/_____

_____/_____

FAX Phone Numbers: _____/_____

_____/_____

Radio Group/Channel _____/_____

_____/_____

12.9 Initial Entry Objectives:

List entry objectives and name assignments for each team. All personnel shall be briefed on communication methods, emergency evacuation, event status, product hazards, personal protective equipment required, overall objectives and on their specific job functions.

Names of Entry Team #1

_____

_____

_____

_____

Entry Team #1 Objective_____

_____

_____

_____

Names of Entry Team #2:

_____

_____

_____

_____

Entry Team #2 Objective:_____
_____
_____
_____

Names of Entry Team #3:
_____
_____
_____
_____

Entry Team #3 Objective:_____
_____
_____
_____

Names of Backup Team:
_____
_____
_____
_____

Backup Objective: _____
_____
_____
_____

Names of Decon Team:
_____
_____
_____
_____

Decon Team Objective: _____
_____
_____
_____

NOTE: Prior to initiation of and upon completion of assigned tasks, each team shall be monitored by on-scene medical personnel. HMRT members will be monitored as outline in Attachment B - Hazardous Materials Medical Surveillance Report. Attachment C shall be completed for each person involved in initial entry, backup, decon and for those individuals assigned other tasks in this section. Water or other appropriate fluids will be available at the medical monitoring station for all on-scene personnel to reduce the possibility of heat related injuries. Appropriate measures such as warm vehicles, clothing and blankets will be available for cold related injuries

12.10 Subsequent Entry Objectives

List entry objectives and name assignments for each team below. All personnel shall be briefed on their specific job functions. **Each person listed below shall read and understand the content of this section (12.0 Scene Safety Plan)**

Names of Entry Team #1

_____
_____
_____
_____

Entry Team #1 Objective_____
_____
_____
_____

Names of Entry Team #2:

_____
_____
_____
_____

Entry Team #2 Objective:_____
_____
_____
_____

Names of Entry Team #3:

_____
_____
_____
_____

Entry Team #3 Objective:_____
_____
_____
_____

Names of Backup Team:

_____
_____
_____
_____

Backup Objective: _____
_____
_____
_____

Names of Decon Team:
_____
_____
_____
_____

Decon Team Objective: _____
_____
_____
_____

NOTE: Prior to initiation of and upon completion of assigned tasks, each team shall be monitored by on-scene medical personnel. HMRT members will be monitored for blood pressure, pulse, respiration and pupil response. Attachment C shall be completed for each person involved in initial entry, backup, decon and for those individuals assigned other tasks in this section. Water or other appropriate fluids will be available at the medical monitoring station for all on-scene personnel to reduce the possibility of heat related injuries.

12.11 Decontamination

Decontamination procedures shall be established during the hazard evaluation process. All decontamination requirements shall be documented below:

Decon Setup:
_____
_____
_____

Emergency Decon shall include the following:
_____
_____
_____

Decon Equipment required:
_____
_____
_____

Decon solution:
_____
_____
_____

12.12 Suit Journal Report:

Record necessary information as may be required by suit manufacturer to document product exposed to, length & type of exposure and decon solution

_____

_____

12.13 Emergency Procedures:

The following standard emergency procedures will be used by on-scene personnel. The Safety Officer shall be notified of ANY on-scene emergencies and be responsible for ensuring that the appropriate procedures are followed.

The following hand signals shall be used in case of radio failure:

Hands gripping throat	Out of air / Breathing difficulty
Grip partner's wrist	Leave area immediately.
Hands on waist	Leave area immediately.
Hands on top of head	Need assistance.
Thumbs up	I'm OK / I understand.
Thumbs down	I'm not OK.

Uncontrolled Fire/Explosion:

Incident Commander, using radio and public address, will announce to all involved in the area to evacuate. Air horns of emergency response vehicles will sound with three blasts to indicate emergency evacuation.

Personal Protective Equipment Failure:

If any responder experiences a failure or alteration of the PPE, that person AND his/her buddy shall immediately leave the hot zone. Re-entry shall not be permitted until the equipment has been properly repaired or replaced. The "buddy system" shall be used at all times.

Other Equipment Failure:

If any other equipment on the incident scene fails to operate properly, the Incident Commander and the Safety Officer shall be notified and then determine the effect of this failure on continuing operations. If the failure effects the safety of personnel or prevents completion of the Entry Objectives, all personnel shall leave the hot zone until the situation is evaluated and appropriate actions taken.

Emergency Escape Routes:

NOTE: Routes shall be designated for exit from the hot zone in case egress cannot occur through the established decon area.

_____

_____

In all situations, when an incident scene emergency results in evacuation of the hot zone, personnel do not re-enter until:

- **The conditions resulting in the emergency have been corrected.**
- **The hazards have been reassessed.**
- **The Scene Safety Plan has been reviewed.**
- **Scene personnel have been briefed on any changes in the Scene Safety Plan.**

13.0 MEDICAL TREATMENT FACILITY

Document name/location of nearest medical facility.

Facility Name	Location	Telephone
_____	_____	_____
_____	_____	_____

14.0 DOSIMETER (Pencil) READINGS

Document readings from dosimeters in the section noted below.

Dosimeter #	Name of Responder	mR/hr reading	Stay Time Estimated
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

15.0 SIGNATURES

All scene personnel are required to read and understand the provision of the Scene Safety Plan and sign below upon completion of the review.

Title	Name (Printed)	Signature
Incident Commander	_____	_____
Safety Officer	_____	_____
Operations Officer	_____	_____
HMRT Senior Officer	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Upon resolution of the incident, the Incident Command or designee shall be responsible for completing applicable attachments and conducting an incident critique.

16.0 ATTACHMENTS

15.1 Attachment A - HMRT Hazardous Material Data Sheet
15.2 Attachment B - HMRT Hazardous Materials Medical Surveillance Report
15.3 Attachment C - HMRT Hazardous Materials Response Summary
15.4 Attachment D - Emergency Communications Center Report

17.0 COMMENTS

ATTACHMENT A - Hazardous Material Response Team

HAZARDOUS MATERIAL DATA SHEET

Note: Complete a Data Sheet Form for each hazardous material

Hazardous Material:
Shipping Name _____Dot Hazard Class _____

Chemical Name _____ID# _____ STCC# _____

Physical Description:

Normal Physical Form: Solid _____ Liquid _____ Gas _____

Molecular Weight:_____

Color _____ Odor _____

Other _____

Radiological Hazards:

Location Distance from package Reading

Alpha: _____/_____/_____

Beta: _____/_____/_____

Gamma:_____/_____/_____

Other Info:

_____

Radioactive White-I 0.5 mR/hr maximum on surface

Radioactive
Yellow-II 50 mR/hr maximum on surface; 1 mR/hr maximum at 1 meter

Radioactive
Yellow-III 200 mR/hr maximum on surface; 10 mR/hr maximum at 1 meter

Hazardous Materials Incident Response Procedure

Chemical Properties:

Specific Gravity_____ Vapor Density_____

Boiling Point _____°F Melting Point _____ °F

Vapor Pressure _____ psi or mmHg at _____°F

Expansion Ratio_____

Solubility In water: Yes No

Degree of solubility: _____

Other _____

Health Hazards:

Inhalation Hazard: Yes No TLV/TWA _____ ppm(mg/m)

LC50 _____ ppm/hr.

Ingestion Hazard: Yes No LD50 _____ mg/kg

Absorption Hazard: Yes No

Skin: Yes No

Eyes: Yes No

IDLH Value _____ ppm/air(mg/m)

STEL Value _____ ppm/air(mg/m)

Chronic Hazard:

Carcinogen:	Yes	No
Mutagen:	Yes	No
Teratogen:	Yes	No
Hazardous to Aquatic Life:	Yes	No

Other:

_____

Decontamination Procedures:

_____

_____

First Aid Procedures:

_____

_____

Fire Hazards:
( )Yes Flash Point _____F Ignition (Autoignition) Temperature _____F

( )No Flammable (Explosive) Range: LFL(LEL)_____% UFL(UEL) ____%

Toxic Products of Combustion _____

Other _____

Possible Extinguishing Agents: _____

Reactivity Hazards:
( )Yes Reactive with what _____
( )No
Other _____

Corrosivity Hazards:
( )Yes pH _____ Corrosive to what: Skin: Yes No Steel: Yes No
( )No Other _____

Neutralizing Agents

_____

Recommended Protection:

For Public - Evacuation distance _____ (specify unit of measure)

for _____ (quantity)_____

For Response Personnel (Level of protection required)

_____

_____

For Environment _____

_____

Completed By _____ Date_____ Time _____

REMARKS:

_____

_____

_____

_____

_____

_____

ATTACHMENT B - Hazardous Materials Response Team

HAZARDOUS MATERIALS MEDICAL SURVEILLANCE REPORT

1.0 Name: _____ S. S. #: _____

2.0 Date: _____

3.0 Incident Number:_____

4.0 Pre-Entry Medical Monitoring:

4.1	**Vital Signs**		**Exclusion Criteria**
4.1.1	Blood Pressure_____/_____		Diastolic pressure > 105mHg
4.1.2	Pulse _____		>70% maximum heart rate (max. heart rate =220 age)
4.1.3	Respiration	_____	>24 per minute
4.1.4	Temperature	_____	> 99.5° F oral or <97° F oral >100.5° F core or <98° Fcore
4.1.5	Weight	_____	No pre-entry exclusion
4.1.6	EKG	_____	Dysrhythmia not previously detected (attach 10 second strip)
4.2	**Skin Evaluation**		
4.2.1	Rash, wound, open sore	_____	Open wound, sore, large area of rash or significant sunburn
4.3	**Mental Status**		
4.3.1	Alert w/normal speech:	_____	Altered mental status, slurred speech or body weakness

4.4 Medical History

4.4.1 Medications - list medications taken within past 24 hrs: _____

Prescription medications taken within past two weeks: _____ (including over-the-counter meds. such as cold, flu or allergy meds. within past 72 hours)

4.4.2 Alcohol consumption within past 24 hours: _____

Any alcohol consumption within past six hours or heavy alcohol intake with past 72 hours : _____

4.4.3 Medical treatment or diagnosis made within last 2 weeks: _____

4.4.4 Symptoms of fever, nausea, vomiting, diarrhea or cough during past 72 hours: _____
Presence of nausea, vomiting diarrhea, fever, upper respiratory infection, heart illness or heavy alcohol intake within past 72 hours. _____

4.5 Hydration

4.5.1 Consumption of 8-16 ounces of water or diluted activity drink :_____
Lack of consumption of 8-16 ounces of water or diluted activity drink. _____

5.0 Post-Entry Medical Monitoring:

5.1 Vital Signs

5.1.1 Blood Pressure _____ /_____
5.1.2 Pulse _____
5.1.3 Respiratory rate _____
5.1.4 Temperature _____
5.1.5 EKG (if available) _____
5.1.6 Weight _____

5.2 Skin Evaluation

5.2.1 Rash, wounds, open sores_____

5.3 Mental Status

5.3.1 Alert / Normal speech:_____

6.0 Post-Medical Monitoring Follow -Up:

Post-medical monitoring follow-up should include the following:

(a) Repeat monitoring of vital signs every 5-10 minutes until they return to less than 85 percent of maximum pulse rate. If at 10 minutes the signs have not returned to within 10 percent of

baseline, perform orthostatic vital signs.

(b) Determine from medical control what information regarding latent reactions/symptoms should be communicated to response personnel.

(c) If any of the following symptoms are present, contact medical control for direction and preparation for possible transport to a medical facility:

1. Body weight loss of greater than 3 percent or positive orthostatic (pulse increase by 20 beats per minute or systolic blood pressure decrease by 20 mmHg at two minutes standing)
2. Greater than 85 percent maximum pulse at 10 minutes.
3. Temperature greater than 101°F (oral) or 102°F (core)
4. Nausea, vomiting, diarrhea, altered mental status, or respiratory, cardiac, or dermatologic complaints

7.0 Treatment Protocol for Hazardous Materials Team Members

Rest time for all personnel should equal at least minimum suit time. Individuals may require additional time for oral rehydration. All personnel should be informed of signs and symptoms to watch for.

7.1 If the team member is not within 10 percent baseline within 10 minutes, orthostatic vital signs should be taken.

7.2 If personnel experience greater than 3 percent body weight loss (4 1/2 pounds in a 150 pound person); positive orthostatic (pulse increases by 20 beats per minute or systolic blood pressure decreases by 20 mmHg at two minutes standing); greater than 85 percent of maximum pulse at 10 minutes; temperature greater than 101°F oral (102°F core); nausea, altered mental status or any other symptoms, the following treatment should be performed:

(a) Intravenous fluids hydration with Ringers Lactate or Normal Saline at rate (usually wide open) to get pulse less than 100 beats per minute, systolic blood pressure greater than 110mmHg.

8.0 Product(s) Exposed To; _____

9.0 Length of Exposure:_____

10.0 Type of PPE Worn:_____

Surveyed by: _____

Organization: _____

Date: _____

ATTACHMENT C - Hazardous Materials Response Team

HAZARDOUS MATERIALS RESPONSE SUMMARY REPORT

REPORT NO.

1.0 DATE: _____

2.0 TIME (BEGIN/END): _____

3.0 TAPE NO.: _____

4.0 CALLER NAME/ORGANIZATION_____

5.0 CALL BACK NO./LOCATION: _____

6.0 MUTUAL AID NOTIFICATIONS
MADE: YES/NO

7.0 STATE NOTIFIED: YES/NO

8.0 PRODUCT(S) INVOLVED: (Name)

8.1 Solid/Liquid/Gas _____

8.2 Quantity _____

8.3 Container _____

8.4 Mixed/Single Load _____

9.0 INCIDENT Include:

9.1 Type of Accident _____

9.2 Time _____

9.3 Details/Injuries _____

9.4 Hazards _____

9.5 Evacuations Required _____

9.6 Protective Action Taken _____

10.0 LOCATION

10.1 Road No./Distance-Direction

_____

10.2 Law Enf./Fire Response_____

10.3 Weather/Temperature/Wind _____

10.4 Populated/Open Area _____

10.5 Topography _____

10.6 Stream/Sewer Involved _____

11.0 SHIPPER

11.1 Carrier, Name/Type/Address _____

_____

11.2 Rail Car No._____

11.3 Consignee/Address_____

11.4 Origin/Designation_____

11.5 B/L - Waybill No._____

12.0

PERSONS NOTIFIED	TIME	PHONE	AGENCY / DEPT.
_____/	_____	_____	_____
_____/	_____	_____	_____
_____/	_____	_____	_____
_____/	_____	_____	_____
_____/	_____	_____	_____
_____/	_____	_____	_____

_____/_____ _____ _____

_____/_____ _____ _____

_____/_____ _____ _____

_____/_____ _____ _____

13.0 AGENCIES CALLED: (Check)

❑ DOE Regional RAP Team
❑ State Radiation Authority State Police
❑ State Environmental Protection
❑ State Emergency Preparedness County Police
❑ County Emergency Preparedness
❑ Local Hospital Information/Remarks:

_____
_____
_____

14.0

Unit No.	Time Out	Return to Service
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

15.0

Personnel Responding	Assignment	Entry Time
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

_____ _____ _____

_____ _____ _____

_____ _____ _____

16.0 CORRECTIVE ACTIONS/CONTROL MEASURES TAKEN

_____

_____

_____

_____

17.0 INJURIES/FATALITIES

NAME / SS#	INJURY
_____/_____	_____
_____/_____	_____
_____/_____	_____
_____/_____	_____

18. Supply/Equipment

Material Used (Include item & quantity used)	Decon Required? (If yes, how)	Cost	Charge	Code
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

19.0 Complete HMRT Suit Journal data sheets indicating use, exposure, suit status and inspection results. Attach Suit Journal data sheets to this report.

20.0 To complete incident documentation, verify and attach the following to make a single report.

Completed and Attached

Attachment A	YES / NO
Attachment B	YES / NO
Attachment C	YES / NO
Attachment D	YES / NO

If attachments are not complete or attached, provide a detailed explanation.

_____

_____

21.0 Report prepared by:

Name: _____ Agency: _____ Date: _____

Name: _____ Agency: _____ Date: _____

Name: _____ Agency: _____ Date: _____

Name: _____ Agency: _____ Date: _____

Name: _____ Agency: _____ Date: _____

ATTACHMENT D - Emergency Communications Center

HAZARDOUS MATERIALS RESPONSE REPORT

REPORT NO. _____

1.0 DATE: _____

2.0 TIME OF NOTIFICATION:_____

3.0 CALLER NAME/ORGANIZATION:_____

_____

4.0 CALL BACK NO./LOCATION: _____

5.0 INDIVIDUAL / AGENCY INVOLVED:_____

PHONE #: _____

6.0 PRODUCT(S) INVOLVED OR: _____

MARKINGS VISIBLE: _____

7.0 INCIDENT DETAILS: (type, quantity, etc.)_____

_____

_____

8.0 LOCATION / TIME OF INCIDENT:_____

_____

9.0 SCENE ACCESSIBILITY/
PRECAUTIONS: _____

_____

10.0 HAS AREA BEEN CLEARED:_____

11.0 INJURIES / TYPES: _____

_____

12.0 ARE PEOPLE CONTAMINATED:_____

13.0 IF REQUEST FOR ASSISTANCE IS FROM ANOTHER EMERGENCY RESPONSE AGENCY:

ARE RESPONDERS ON SCENE: _____

COMMAND POST LOCATION: _____

STAGING AREA: _____

RECOMMENDED RESPONSE ROUTE: _____

_____

COMMUNICATION LINK:

RADIO FREQUENCY: _____

PHONE #:_____

14.0	PERSONS NOTIFIED	TIME	PHONE	AGENCY / DEPT.
	_____/_____	_____	_____	
	_____/_____	_____	_____	
	_____/_____	_____	_____	
	_____/_____	_____	_____	
	_____/_____	_____	_____	
	_____/_____	_____	_____	
	_____/_____	_____	_____	
	_____/_____	_____	_____	

Communications Tech.:_____ Date:_____